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08/320,273 10/11/94 CALLAHAN

R A6503

EXAMINER  
SPITZER, R

13M1/0531

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ART UNIT PAPER NUMBER

4

1305

DATE MAILED: 05/31/95

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on \_\_\_\_\_ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s) days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

- ☒ Notice of References Cited by Examiner, PTO-892.
- ☒ Notice of Draftsman's Patent Drawing Review, PTO-948.
- ☒ Notice of Art Cited by Applicant, PTO-1449.
- ☐ Notice of Informal Patent Application, PTO-152.
- ☐ Information on How to Effect Drawing Changes, PTO-1474.
- ☐ \_\_\_\_\_

**Part II SUMMARY OF ACTION**

1. ☒ Claims 1-12 are pending in the application.

Of the above, claims \_\_\_\_\_ are withdrawn from consideration.

2. ☐ Claims \_\_\_\_\_ have been cancelled.

3. ☐ Claims \_\_\_\_\_ are allowed.

4. ☒ Claims 1-12 are rejected.

5. ☐ Claims \_\_\_\_\_ are objected to.

6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).

12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☒ Other Preliminary Amendment A, dated Oct. 11, 1994, has been received and entered.

**EXAMINER'S ACTION**

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1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
2. The Abstract of the Disclosure is objected to because of the use of the legal phraseology of "means". Correction is required. See M.P.E.P. § 608.01(b).
3. Applicant is reminded of the proper language and format of an Abstract of the Disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said", should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. Claims 1-12 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because in line 5, there is no direct antecedent basis for the recitation of "the process feed gas mixture", and lines 12 and 13 again recite "a very high

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purity permeate gas product" without any correlation to a similar recitation in lines 1 and 2. Claim 4 is indefinite as it again recites "a secondary membrane separator unit" without any correlation to the same recitation in claim 1. Claim 6 is indefinite because there is no antecedent basis for the recitation of "the products of fossil fuel combustion", as no such combustion process is being claimed. Claim 7 is indefinite because there is no antecedent basis for the recitation of "the air", as no such combustion process is being claimed. Claim 8 is indefinite because there is no antecedent basis for the recitation of "the products of fossil fuel combustion in a limekiln", as no such combustion process is being claimed. Also, please check the specification to ensure that it supports claims 6-8. Claims 9 and 10 are indefinite because they again recite "a process gas stream" without any correlation to the "feed gas mixture" of claim 1. In claim 11, carbon dioxide cannot be recovered without the feed gas mixture containing same, therefor, there is no direct antecedent basis for the recitation of "the recovery of carbon dioxide". Also in claim 11, there is no correlation between "a final permeate gas product" and the "very high purity permeate gas product" recited in claim 1. Claim 12 is indefinite because it is not clear to which "unit" the recitation of "which unit" in line 9 refers, as the previous recitations are to the "primary stage membrane separator unit" and the "secondary stage membrane separator unit". Claims 2, 3 and 5 depend from indefinite claim 1 and are indefinite for that reason.

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5. Claims 1-11 would be allowable if rewritten or amended to overcome the rejection under 35 U.S.C. § 112.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 12 is rejected under 35 U.S.C. § 102(b) as being clearly anticipated by the structure of either Japanese reference<sup>EN</sup> no. 63- 151,332 or Japanese reference no. 59 - 207,827, both of which show the recited two series connected membrane structure.

8. The remaining references listed on both the PTO-892 and the PTO-1449 show art of interest.

9. Any inquiry concerning this communication should be directed to Robert H. Spitzer at telephone number (703) 308-3794.

Robert H. Spitzer/om  
May 26, 1995

*Robert H. Spitzer*

ROBERT SPITZER  
PRIMARY EXAMINER  
GROUP 1300

5/30/95